



EPA Region 5 Records Ctr.



314003

Environment Health & Safety, WTC 2G2
PO Box 9777
Federal Way, WA 98063-9777
Telephone: (253) 924-3746
Fax: (253) 924-6182
E-Mail: Jennifer.hale@weyerhaeuser.com

August 21, 2007

Mr. Sam Chummar
Remedial Project Manager
U.S. Environmental Protection Agency - Region 5
77 W. Jackson Blvd. SR-6
Chicago, IL 60604

RE: Revised Final Plainwell Mill Banks Reconnaissance and Design Investigation Emergency Response Action, Plainwell Mill banks, Plainwell Michigan (Consent Decree, No. 1:05CV003)

Dear Sam:

Attached for your files is the revised scope of work and data quality objectives for the Plainwell Mill Banks Reconnaissance and Design Investigation. This document incorporates the specific comments that you provided in your July 20, 2007, letter to Weyerhaeuser. We are integrating your general comment on interactions with the City of Plainwell by sending them drafts of our reports prior to submittal to the United States Environmental Protection Agency. The residuals disposal location will be discussed in the Plainwell Banks Design report.

Thank you for your cooperation and assistance on this action. We appreciate your prompt attention matter and look forward to on-going discussions regarding the next steps in this action. Please feel free to contact me or Jim Hutchens and Kathy Huibregtse at RMT if you have any questions.

Sincerely,

Weyerhaeuser Company


Jennifer Hale
Environmental Manager

cmk

cc: Paul Bucholz
Michael Berkoff
Eileen L. Furey
Jim Seric
Mark Schneider
John Gross
Joe Jackowski



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Date: July 16, 2007 (Revised August 21, 2007, per July 20, 2007, letter from USEPA)

To: Sam Chummar, USEPA RPM

From: Jennifer Hale, Weyerhaeuser Company
Kathy Huibregtse, RMT, Inc.

cc: John Gross, Weyerhaeuser Company
Jim Hutchens, RMT, Inc.
Linda Hicken, RMT, Inc.

Subject: Plainwell Mill Bank Reconnaissance and Design Investigation
Emergency Response Action, Plainwell Mill Banks, Plainwell, Michigan

Background

Phase I of the Plainwell Impoundment Time Critical Removal Action (Plainwell TCRA) is being conducted during the summer and fall of 2007. Actions being taken for the Plainwell TCRA could cause a release of hazardous substances from the Plainwell Mill Property. Specifically, Weyerhaeuser understands that conditions along the Kalamazoo River at the former Plainwell impoundment have been determined to represent an imminent and substantial threat to public health and the environment in the February 14, 2007, Enforcement Action Memorandum prepared by the United States Environmental Protection Agency (USEPA) and are thus being addressed as described in a Settlement Agreement with members of the Kalamazoo River Study Group (KRSF). Upstream of Michigan State Highway 131, specific areas of river bank and floodplain soils have been targeted for removal. Downstream activities include dismantling a portion of the existing Plainwell Dam and relocating the flow of the Kalamazoo River to its original channel.

Future activities may also include removal of additional downstream dams. A 2002 study by USGS suggests that removal of the three downstream dams will increase the slope of the river and river velocity. In two separate assessments of the impacts associated with dam removal, (USGS, 2004 and USDA, 2004), both studies concluded that erosion on the toe of the slope will widen the channel, erode the toe of the slope with resultant steeper bank angles. As the undercut expands, the bank sediments are destabilized resulting in bank failure. Weyerhaeuser believes that the presence of paper residuals in the floodplain soils along the Plainwell Mill combined with the increased flow velocity associated with the dam removal completed as part of the Plainwell Impoundment removal action, threatens the potential release of waste material.

In order to prevent, abate, or minimize such a release, Weyerhaeuser proposes to proceed under Paragraph 67 of the Consent Decree with the excavation of residual materials present in the floodplain and bank areas near the river along Plainwell Mill, the reshaping of banks in those locations, and the construction of erosion controls to minimize undercutting. These bank areas are part of the Kalamazoo

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River Operable Unit. Unless otherwise approved by the USEPA, specific emergency response work to be performed by Weyerhaeuser to address the threatened release will be designed and performed in a manner that considers the implications of the City of Plainwell's approved land use plan for the Kalamazoo riverfront area, if available, and consistent with applicable provisions of the Settlement Agreement and the Former Plainwell Impoundment Time-Critical Removal Action Design Report (Appendix 4 to the Settlement Agreement).

Plainwell Mill Bank Design Investigation Data Quality Objectives

Previous data collected by CDM (2001), Weston (2002), and others have identified visible residuals present in several low lying floodplain areas along the bank of the Plainwell Mill (see Figure 1). Boring logs indicate that typically the visible residuals contain polychlorinated biphenyls (PCBs) concentrations greater than 4 ppm. The purpose of the bank investigation is to determine the horizontal and vertical extent of residuals along the bank of the Plainwell Mill. The location of the residuals and their proximity to the Kalamazoo River will be used to assess their potential for causing adverse risk. Together, the location and the extent of residuals will be used to determine if an emergency action is necessary. A detailed discussion of each of the seven steps to support these DQOs is presented in Table 1.

Objectives of the Project

1. To establish extent of residuals targeted for excavation (if any) in Areas A, B, and C as shown on Figure 1.
 - Estimate extent and refine quantity of residuals in floodplain Areas A, B, and C through visual observation of soil samples and survey data.
 - Confirm characteristics of banks, subsurface soils and sediment types adjacent to excavation Areas A, B, and C.
2. To identify conditions in other areas of the banks that may need to be considered during the Plainwell Mill banks Emergency Response.
 - Verify the presence and quantity of residuals at locations not included in Areas A, B, and C.
 - Collect bank soil samples near outfall locations to determine if residuals are observed.
 - Identify conditions along the bank that would impact residuals excavation, bank reshaping or the interface of the banks with future land use.

Plainwell Mill Bank Design Investigation Work Scope

- Visual reconnaissance of the bank to focus on obstacles that may hinder any targeted excavation activities and to specifically locate hand auger and Geoprobe sampling locations (with stakes). Items that will be photo-documented if observed include concrete rubble, large rocks, power lines, historic outfalls, debris, etc. Their presence could impact the site activities, so identifying these items will assist with final design and implementation of the Emergency Response.
- Area A on Figure 1 is a low lying flood plain where residuals are present within the top 1 foot and range in thickness from 1 to 2 feet. Residuals in Area A are close to the river on the floodplain and

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thus may experience increased erosion due to alterations of the Plainwell Mill impoundment. The horizontal and vertical extent of residuals in the floodplain is defined from past data, the extent of residuals that may be present now and in subsurface soils behind these floodplain residuals is unknown. To accurately document and verify the horizontal and vertical extent of the residuals in Area A, approximately five hand auger samples will be collected to confirm the thickness and extent of residuals.

- Sediment probes or hand augers will also be advanced approximately 5 feet from the bank into the Kalamazoo River along selected bank transects to locate the toe of the bank and to determine if soft sediments remain adjacent to the bank. Four of these transects will be located along Area A and other transects will be placed adjacent to Mill bank areas where residuals are found to exist as bank material. Table 2 summarizes the planned sampling activities in these and other bank locations. All sampling data will be located using handheld Global Positioning System (GPS) measurements as well as horizontal and elevation surveys.
- Areas B and C have been reported to contain residuals with measured PCB concentrations greater than 50 ppm, but the areas are not defined in any dimension and therefore the level of risk is unknown. Activities to better define the presence of residuals in these two locations will include visual assessment of surface and subsurface soils and performance of a detailed survey to establish accurate estimates of horizontal and vertical extent of any observed residuals. Approximately four to five hand augers will be advanced in each area (Areas B and C) to document the vertical and horizontal extent of wastes in these low lying areas. In addition, supplemental hand augers will be advanced at approximately 100 foot spacing intervals the Mill banks between Areas A, B, and C and along the Mill buildings.
- Four former outfall locations have been identified along the bank of the Plainwell Mill. The purpose of each discharge location will be confirmed during the Remedial Investigation (RI) activities after approval of the Remedial Investigation/Feasibility Study work plan. Based upon location and known site history, three of the four outfalls are likely storm water discharge locations and one is apparently the effluent discharge from the wastewater treatment plant. A sediment probe or hand auger will be advanced at the point of discharge to determine if residuals exist near or in the outfalls that could functionally become an on-going source to the river. If additional outfalls are identified during the visual reconnaissance, sediment probes or hand augers will also be placed at those locations.
- In addition to the hand auger sampling activities discussed previously, subsurface soil samples (Geoprobe borings) will be collected at the top of the bank along Areas A, B, and C to confirm that the residuals are isolated and to identify subsurface soil conditions that may not be able to support construction equipment. A horizontal and elevation survey will also be performed to facilitate calculation of soil volumes and to provide information needed to refine bank re-grading options.
- Prepare a Soil Boring Log for each Geoprobe borehole based on visual observation. The materials encountered will be classified based on the procedures outlined in ASTM D-2488. The logs will document the borehole identification number, the drilling dates and times, names of field personnel, soil descriptions, sample depths, and recovery. As may be appropriate, photographs of the materials encountered or other pertinent observations will be documented. Photographs will be labeled to indicate the subject, location, date, name of photographer, and project identification number. Formal boring logs will not be completed for hand augers and sediment cores, but information will be recorded to include general soil types, the presence of residuals, residual depth, and thickness if present.

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- The on-site geologist or geological engineer will prepare the Soil Boring Logs in the field. The logs will be reviewed by the senior engineer in the office. A field notebook will also be maintained by the on-site geologist or geological engineer to document other pertinent field information. The senior engineer will review the field notebook for clarity and completeness in meeting the investigation objectives.
- Abandon the Geoprobe boreholes by filling them with bentonite grout following completion of the borehole logs.
- Drilling, hand auger, and sediment coring equipment will be decontaminated if residuals are encountered during the course of work. Decontamination will occur between successive borings. Otherwise, the drilling equipment will be decontaminated following completion of the work.
- Geoprobe® samples will be containerized on site in a 55-gallon drum that will be properly labeled and stored near the former wastewater treatment buildings. Hand auger and sediment coring samples will be placed back into the sample hole to the extent practical. Otherwise, they will also be containerized in the on-site drum. It is anticipated that the drum will be removed from the site during the Emergency Response addressing residuals on the banks.
- Survey the locations and ground surface elevations of the Geoprobe boreholes following completion. The accuracy of the survey will be ± 0.01 foot for the horizontal coordinates and ± 0.1 foot for the vertical elevation. The survey locations will be added to the boring logs. Additional survey points will be completed in the Kalamazoo River near Area A to confirm the bank toe. In addition, hand auger and sediment cores that indicate the presence of residuals will also be surveyed to determine if there is a correlation between presence of residuals and elevation relative to the former impoundment.

Decontamination Procedures

Sampling equipment will be rinsed with clean water between sampling locations. As appropriate, temporary decontamination stations will be located near the areas being sampled. These temporary areas will consist of plastic sheeting placed on the ground surface, a series of 5-gallon wash and rinse buckets, appropriate brushes and paper toweling for extra drying if needed. City or purchased potable water will be used for decontamination. The following general steps will be used in the decon process:

- Loose material will be brushed off into a 5-gallon solid waste bucket.
- Hand auger will be scrubbed with potable water in a 5-gallon liquid wash bucket.
- Hand auger will be rinsed twice with clean potable water in 5-gallon liquid rinse buckets.
- Hand auger will be dried as needed with paper towels.

As the wash water becomes non-useable, it will be transferred into a 55-gallon drum designated for decon water. Decontamination water and investigation derived solid wastes will be stored on-site in 55-gallon drums at the former wastewater treatment plant area prior to characterization and off-site disposal.

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Table 1
Geotechnical Investigation Data Quality Objectives
Question Summary

Major Steps	Questions to Consider	Site Information
Step 1: State the Problem	<i>Identify the members of the planning team and the primary decision-maker.</i>	The members of the planning team will include the Weyerhaeuser Project Manager, RMT project team, and drilling contractor. The primary decision-maker is the Weyerhaeuser Project Manager in consultation with the USEPA RPM.
	<i>Develop a concise description of the problems.</i>	In 2001 and 2003, investigations of the Plainwell Bank confirmed PCB concentrations >4 mg/kg associated with the presence of residuals. However, no detailed information is available regarding the quantity or extent.
	<i>Specify available resources and relevant deadlines for the study.</i>	Available information includes historical data for river banks and hydrologic studies prepared by various agencies. Additional information is needed as soon as possible to coordinate with the planned Time Critical Removal Action on the Former Plainwell Impoundment (TCRA).
Step 2: Identify the Decisions	<i>Identify the principal study questions.</i>	Where along the bank of the Plainwell Mill bank are residuals located, how much material is present (depth, width, and horizontal extent).
	<i>Define alternative actions.</i>	Since historic sample locations are uncertain, residuals may not be observed in the first sampling location. Therefore, additional hand augers will be advanced to confirm these observations. The quantity and location of residuals targeted for excavation will be identified in the Emergency Action Design Report, as determined by the results of this investigation.
	<i>Develop decision statement.</i>	Once residuals are located through hand augers, additional locations hand augers will be used to define size and observe soil characteristics. GIS measurements and elevation survey data will locate the deposits for evaluation of their proximity to the Kalamazoo River. The targeted excavation areas and any other management approaches for residuals will be described in the Emergency Action Design Report.

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Major Steps	Questions to Consider	Site Information
Step 3: Identify Inputs to the Decision	<i>Identify the information that will be required to resolve the decision statement.</i>	Hand augers will be advanced at a number of locations where residuals are suspected. Geoprobe borings will be advanced in upland areas to determine if residuals extend within the current banks.
	<i>Determine the sources for each item of the information identified.</i>	The 2001 and 2003 data provided basic description of residual locations.
	<i>Identify the information that is needed to establish the action level.</i>	Visual identification of residuals along the Plainwell Mill bank and classification of bank soil types.
	<i>Confirm that appropriate measurement methods exist to provide the necessary data.</i>	Hand augers, sediment cores, and Geoprobe borings with visual classification will be consistent with data needs.
Step 4: Define the Boundaries of the Study	<i>Specify the characteristics that define the population of interest.</i>	Soil types, texture, grain size, color, and other observable characteristics.
	<i>Define the spatial boundary of the decision statement.</i>	Entire length of the banks along the Plainwell Mill property. Samples will be collected at individual locations and results extrapolated to define quantity and distribution of residuals thus supporting decision making.
	<i>Define the temporal boundary of the decision statement.</i>	Design information is needed immediately to support construction in 2007. Input and site actions will be completed when dam reconstruction and Kalamazoo River re-routing is finished (targeted for 2008).
	<i>Define the scale of decision-making.</i>	Location of the residuals provides information needed to assess bank conditions and provide input into the Emergency Action design.
	<i>Identify practical constraints on data collection.</i>	Practical constraints could include the access challenges on specific slopes, the presence of underground or overhead utility lines, debris piles, coarse fill material, trees and shrubs, and adverse weather.
Step 5: Specify Tolerable Limits on Decision Errors	<i>Determine the possible range of the parameter of interest.</i>	Soil types identified in bank or soils consistent with past descriptions identified as residuals.
	<i>Identify the decision errors, and choose the null hypothesis.</i>	The baseline condition (null hypothesis) is that the residuals are present along the bank and present an imminent threat to human health or the environment.

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Major Steps	Questions to Consider	Site Information
	<i>Specify the range of possible values of the parameters of interest where the consequences of decision errors are relatively minor.</i>	Soil conditions in localized areas are not accurately defined. Uncertainty could be addressed through analytical tests of samples if multiple nearby samples do not provide sufficient information.
	<i>Assign probability values to points above and below the action level that reflect the tolerable probability for the occurrence of decision errors.</i>	It is very unlikely that 30 to 40 hand augers samples to 3 feet below grade will all result in misidentification of soil conditions after review by field geologists and checking of bagged samples by senior engineers.
Step 6: Optimize the Plan	<i>Review the DQO outputs and existing environmental data.</i>	Visual information from multiple soil samples will be combined with location information to assess the presence and quantity of residuals.
	<i>Develop the general data collection design.</i>	Data design is based upon multiple hand augers along the Plainwell Mill bank at approximately 100 foot intervals. Hand augers are expected to extend to the depths of 1 to 3 feet or to refusal. Hand auger results will be supplemented by Geoprobe borings and selected sediment cores in locations where residuals were identified in the hand auger samples.

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Table 2
Proposed Sampling Locations Near Areas A, B and C

Sample Type	Sample Collection Approach	Observations	Sampling Objective	Locations ^(see Notes)
Surface soils to ~2 to 3 feet below ground surface (bgs)	● Advance hand augers.	Presence, depth, thickness, and horizontal extent of residuals.	Visually verify the presence, depth, thickness, and horizontal extent of residuals and document other conditions that may impact Emergency Response.	<u>Area A</u> Sample at perimeter and center to confirm presence and depth of residuals. Assume 5 to 8 locations.
				<u>Areas B and C</u> Sample at documented locations through depth of residuals then offset approximately 20 feet horizontally in northeast and southwest directions. Assume a total of 6 to 10 locations.
				<u>Other Areas: Between Areas A and B</u> 1. Confirm presence of residuals at four historic sampling locations. 2. Sample at approximately 100 foot centers (8 locations). (Locations may change based on visual observations during field activities. 3. Assume up to eight additional borings to confirm extent if residuals are identified.
				<u>Other Areas: Remainder Portion of Mill Property Between Areas B and C and Along Mill Buildings</u> Sample at approximately 100 feet centers along remaining portion of property. Assume up to 5 to 8 locations.

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Sample Type	Sample Collection Approach	Observations	Sampling Objective	Locations ^(see Notes)
Surface sediments to depth of 6 to 12 inches bgs	▲ Advance hand augers or piston core.	Visual observations of grain size, material type, or residuals.	Identify presence of soft sediments or residuals at edge of river channel or confirm non-depositional environment in river (<i>i.e.</i> , sandy sediment or gravel).	Four sediment samples will be collected near Area A with additional sediment samples collected near Areas B and C if needed depending upon the confirmation of local residuals.
			Identify presence of soft sediments or residuals within river channel near previously identified outfall locations.	<u>Other Areas:</u> Previously Identified Outfall Locations (near bank) Assume 4 hand augers.
Subsurface soil conditions behind in river bank to depth of 10 to 15 feet bgs	⊙ Extend Geoprobe samples to depths below the floodplain elevation.	Soil types along upper banks. Presence of residuals or other materials (<i>e.g.</i> , debris) behind the floodplain areas.	Identify whether residuals exist under banks to help determine approach.	<u>Areas A, B, and C</u> Assume up to 6 to 8 Geoprobe borings to 10 to 15 feet bgs and 3 borings between Areas B and C. Final locations and number of probes will depend upon actual residual identification.
Subsurface soils in upland areas behind additional floodplain where residuals were identified	⊙ Extend Geoprobos through upland soils adjacent to floodplains. Extend Geoprobe samples to floodplain depths.	Determine presence of residuals behind the floodplain.	Assess soil conditions to support bank reshaping options and additional excavation/action areas.	<u>Other Areas:</u> Extend Geoprobos to depths of adjacent land surface (~ 5 to 8 feet above grade) Extend Geoprobos to ~10 to 15 feet bgs. Assume up to 8 Geoprobe locations. Final location and number of probes will depend upon actual residual identification.

Notes:

1. All sample locations to be located with GPS and standard survey techniques.
2. Sample collection approach may change depending upon site conditions.
3. Sample locations are approximate. Actual locations may change based on field observations.



LEGEND - Total PCBs (mg/kg)

Removal Assessment Report (Weston, 2002)

- 0.0 - 1.0
- 1.0 - 4.0
- 4.0 - 50.0
- >50

Former Plainwell Impoundment River Bank (BBL, 2003)

- 0.0 - 1.0
- 1.0 - 4.0
- 4.0 - 50.0
- >50

Plainwell Paper Gray Seam Investigation (CDM, 2001)

- 0.0 - 1.0
- 1.0 - 4.0
- 4.0 - 50.0
- >50

PROPOSED SAMPLING LOCATIONS (JULY 2007)

- GEOPROBE LOCATION (SOIL)
- HAND AUGER OR CORE LOCATION (SEDIMENT)
- HAND AUGER LOCATIONS (SOIL)
- OUTFALL LOCATION

NOTES

1. If samples collected at multiple depths, the maximum concentration is presented.
2. Up to 8 additional hand augers may be advanced between Areas A & B to define the extent of residuals.
3. Preliminary sample locations may change in the field depending upon site observations or field conditions.

0 200 400
Feet

1 inch equals 200 feet



PROJECT:		WEYERHAEUSER COMPANY KALAMAZOO RIVER SUPERFUND SITE	
SHEET TITLE:		PRELIMINARY HAND AUGER AND GEOPROBE LOCATIONS PLAINWELL MILL PROPERTY AND RIVERBANK	
DRAWN BY:	WEBER N	SCALE:	AS NOTED
CHECKED BY:		PROJ. NO.:	00-05116.02
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		FIGURE 1	
		150 N. Patrick Blvd., Suite 180 Brookfield, WI 53045-5854	
		Phone: 262-879-1212 Fax: 262-879-1220	